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UNITED STATES DEPARTMENT OF AGRICULTURE

FOREST SERVICE

PACIFIC NORTHWEST FOREST EXPERIMENT STATION

FOREST STATISTICS FOR WHEELER COUNTY, OREGON

By
F. L. Moravets, et. al.

CALIFORNIA FOREST AND RANGE
EXPERIMENT STATION
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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
PACIFIC NORTHWEST FOREST AND RANGE EXPERIMENT STATION

ADDRESS REPLY TO
DIRECTOR
AND REFER TO

PORTLAND, OREGON

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Forest Survey
County Statistics

June 15, 1937

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Director,
California Forest Experiment Station,
332 Giannini Hall,
Berkeley, Calif.

Dear Mr. Kotok:

Enclosed is a copy of "Forest Statistics for Wheeler County, Oregon", one of a series of mimeographed reports presenting results of the inventory phase of the forest survey in eastern Oregon and eastern Washington counties. A copy of the explanatory text, "The Forest Survey of Eastern Oregon and Eastern Washington", was mailed you with the first report of the series and should be referred to for detailed type descriptions and methods of survey procedure.

Previously forest statistics have been released for all counties in western Oregon and western Washington, for Klamath, Wasco, Jefferson, Harney, Lake, Deschutes, Morrow, Baker, and Crook Counties in eastern Oregon, and for Klickitat, Yakima, Kittitas, Chelan, Okanogan, Ferry, Walla Walla, Columbia, Garfield, and Asotin Counties in eastern Washington. Additional copies of these reports are available for distribution.

Very truly yours,

THORNTON T. MUNGER, Director

By A. J. Andrews
Acting

Enclosure

CALIFORNIA FOREST & RANGE EXPERIMENT STATION
330 GIANNINI HALL, UNIVERSITY OF CALIFORNIA
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FOREST STATISTICS
FOR
WHEELER COUNTY, OREGON

FROM THE INVENTORY PHASE OF THE FOREST SURVEY

U. S. DEPARTMENT OF AGRICULTURE FOREST SERVICE
PACIFIC NORTHWEST FOREST EXPERIMENT STATION
THORNTON T. MUNGER, DIRECTOR

H. J. ANDREWS, IN CHARGE OF FOREST SURVEY R. W. COWLIN, ASSISTANT

F. L. MORAVETS, IN CHARGE OF FIELD AND OFFICE WORK
IN WHEELER COUNTY

PORTLAND, OREGON JUNE 10, 1937

CALIFORNIA FOREST & RANGE EXPERIMENT STATION
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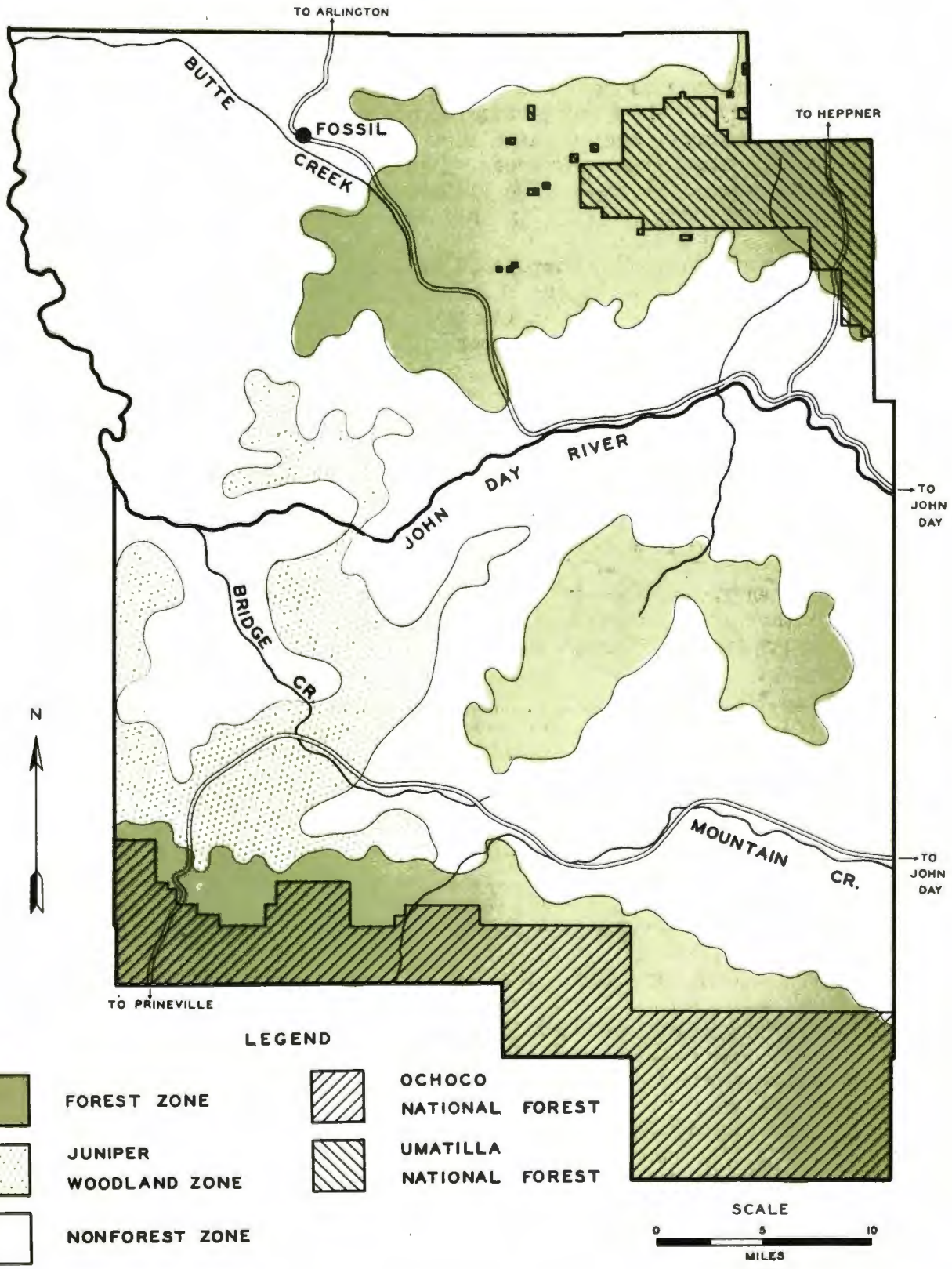
FIGURE 1

OUTLINE MAP OF WHEELER COUNTY, OREGON

1937



FOREST STATISTICS FOR WHEELER COUNTY, OREGON

By F. L. Moravets[1]

This release is one of a series of reports presenting results of an inventory of the forest resources of Oregon and Washington conducted by the Forest Service as a part of a Nation-wide forest survey. It deals with the forest resources of Wheeler County, Oregon, which were inventoried in 1936.[2] The statistics are summarized in four tables and expressed graphically in four figures.

The methods of the survey and detailed definitions of the forest types are contained in "The Forest Survey of Eastern Oregon and Eastern Washington", an explanatory text that should be read in connection with this and other reports for eastern Oregon and eastern Washington counties.

Location and Description of County

Wheeler County lies in the north-central part of Oregon in the western extension of that portion of the State known as the Blue Mountain region. It is one of the smaller counties in eastern Oregon and has a total land area of 1,090,560 acres.[3]

The entire surface of the county is uneven and broken, varying from rolling, gently warped plateaus to deeply entrenched canyons and rugged mountainous terrain. The extreme northern part is an irregular

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1/ THE FIELD AND OFFICE WORK OF THE FOREST SURVEY OF WHEELER COUNTY WAS DONE BY F. L. MORAVETS, H. M. WOLFE, L. E. TUCKER, C. S. SMITH, P. A. BRIEGLEB, W. IRWIN, W. E. PELTO, P. N. PRATT, M. J. LAURIDSEN, A. W. HODGMAN, H. H. ARMSTRONG, B. E. BENNETT, C. E. BROWN, C. L. DE WOLFE, R. S. STEADMAN, MARION BECQUET, AND H. A. DE RICE.

2/ OREGON AND WASHINGTON WERE DIVIDED FOR PURPOSES OF THE SURVEY INTO TWO REGIONS (1) THE DOUGLAS FIR REGION, CONSISTING OF THAT PART OF BOTH STATES WEST OF THE SUMMIT OF THE CASCADE RANGE, AND (2) EASTERN OREGON AND EASTERN WASHINGTON, THAT PART OF BOTH STATES EAST OF THE SUMMIT OF THE CASCADE RANGE. EACH REGION WAS DIVIDED INTO FOREST SURVEY UNITS COMPOSED OF ONE OR MORE COUNTIES. AT A LATER DATE A REPORT WILL BE ISSUED FOR EACH SURVEY UNIT PRESENTING A TEXTUAL DESCRIPTION OF THE UNIT, DETAILED INVENTORY SUMMARIES, AND STATISTICS OF GROWTH AND DEPLETION ANALYZED IN THE LIGHT OF THE INVENTORY. A REGIONAL REPORT WILL ALSO BE ISSUED WHICH WILL PRESENT AND DISCUSS FINDINGS FOR THE REGION AS A WHOLE. THE REGIONAL REPORT WILL INCLUDE AN INTERPRETATION OF THE FOREST SURVEY DATA AS RELATED TO OTHER ECONOMIC DATA AND A COMPREHENSIVE ANALYSIS OF THE REGIONAL FOREST SITUATION FROM BOTH A PHYSICAL AND AN ECONOMIC STANDPOINT.

3/ BUREAU OF THE CENSUS FOR 1930.

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plateau of an average elevation of approximately 3,500 feet. Directly south, and traversing the county from east to west, is the westmost spur of the main Blue Mountains with elevations ranging from 4,000 to 5,000 feet. Further south through the central portion of the county is the valley of the John Day River, also running from east to west. This river, which through its tributaries drains all of the county except a narrow strip along the southern boundary, enters the county at an elevation of 1,800 feet and leaves in the extreme northwestern corner at an elevation of 1,200 feet. Although the flow of the river is now small throughout most of the year, the deep sharp-walled valley through which it flows indicates that previously it must have carried a much larger volume of water. South from the river the topography is for the most part very broken, consisting of irregular plateaus cut by numerous canyons, and from which rise occasional buttes. Another spur of the Blue Mountains extends across the county near its southern boundary and ends to the west in Crook County. The highest elevations occur in this spur, Spanish Peak being 6,885 feet, and a few other peaks over 6,000 feet.

Geologically the area is one of great interest. Through the discovery of extensive fossil beds in many parts of the county and particularly in the gorge cut by the John Day River, scientists have been able to trace much of the history of the geological formation of the region. It is thought that much of the area that is now in Wheeler County was at one time under a fresh water lake that covered a large part of central Oregon, and also that the climate of the region was much milder than now. Fossil remains that have been found in the sedimentary strata indicate a flora of semi-tropical plants and a fauna that included many of the large prehistoric animals. Violent volcanic disturbances and subsequent erosion have caused the formation of the topography as it now exists.

The wide range in elevation and the rugged character of the topography found in the county result in a considerable variation in the amount of precipitation and in the length of the growing season. Although accurate climatological records are available for only one location in the county, the average annual precipitation is thought to vary from 5 to 10 inches at the lower elevations to 20 to 25 inches at the high elevations along the spurs of the Blue Mountains. The growing season probably varies from 150 to 180 days at the lower levels to less than 100 days on the higher ridges and peaks. This variance in precipitation and climate divides the vegetative cover in the county into three distinct zones: nonforest zone, juniper woodland zone, and forest zone (figure 1).

Nonforest Zone

Of the county's gross land area of 1,090,560 acres, 700,530 acres was classified by the survey as nonforest land, 95 percent of

which forms a distinct nonforest zone in the central part of the county. The remaining 5 percent (about 40,000 acres) occurs as scattered natural meadows, glades, and barrens within the forest zone and sagebrush areas within the juniper woodland zone.

The bulk of the nonforest land is used for the grazing of sheep and cattle. Arable land is found only in the valleys of stream courses and on the level bench lands. According to the Census of Agriculture, the total area of crop land harvested in 1934 was about 22,000 acres.

Juniper Woodland Zone

Although western juniper is found throughout the county either as isolated trees or in scattered stands, in only the western portion does it occur over an area of sufficient extent to constitute a distinct zone. However, this zone does not consist of a contiguous stand of juniper but is comprised of a patchwork of individual type areas of juniper and sagebrush, the juniper occupying the more moist sites and the sagebrush the dryer sites.

The county does not lie within the optimum range of western juniper and the species does not reach maximum development, seldom attaining saw-timber size as it does in parts of Deschutes and Crook Counties to the west. The usual form here is a bushy tree from 8 to 20 feet in height, with a rapidly tapering bole averaging from 4 to 10 inches in diameter breast height and frequently containing heart rot. The juniper in the county is utilized by ranchers for fence posts and fuel wood.

Approximately three-fourths of the total area of 53,195 acres of juniper type (table 3) is in the juniper woodland zone. The remainder occurs as scattered type areas in other parts of the county, very largely in the nonforest zone. The juniper found in the forest zone is often associated with mountain mahogany.

In the survey the volume of juniper was estimated in cords only. This cordwood volume is shown by ownership class in table 1. Approximately 87 percent of the juniper type area and 80 percent of the cordwood volume is privately owned; the remainder is largely on public domain lands.

Forest Zone

The forest zone is composed of three distinct units separated by the nonforest zone (figure 1).[4/] The largest of these units extends across the extreme southern portion of the county along a spur of the Blue Mountains. It varies in width from 5 to 13 miles and contains an area of approximately 270 square miles. The mountainous spur roughly divides the unit into equal parts, the southern half falling away from the crest of the spur in a long even slope to the Crooked River drainage, while the northern half breaks off quite sharply from the crest to drain into tributaries of the John Day River. Except at the higher elevations along the divide and on the steep northern slopes the prevailing type is mature ponderosa pine, pure in composition except in the more moist draws where Douglas fir and lowland white fir occur in association. The ponderosa pine found in this unit is of good quality and the stands average from 8 to 18 thousand board feet per acre.

There are a few areas of immature ponderosa pine types, most of which occur along the northern boundary of the unit. Most of these stands have come in on areas deforested years ago by either fire or the western pine beetle (Dendroctonus brevicomis); the area of those on cutover land is small.

The timber on the north slopes and along much of the divide is of the upper-slope mixture type, the stands being composed of Douglas fir, lowland white fir, western larch, and occasionally lodgepole pine. None of these species have any value at present for saw timber; the Douglas fir, although sound, is of poor form; the white fir is of defective quality; and the larch is usually filled with wind shake. On the higher ridges and peaks of the spur there are a few areas of pure lodgepole pine type and subalpine type. The principal present value of these types and the upper-slope mixture types is for watershed protection.

There has been very little depletion in this unit either from logging, fire, or the pine bark beetle. A total of 1,340 acres has been selectively cut over by two small mills operating to supply local demand. This cutover land is in relatively good condition; approximately 80 percent of the area has a reserve stand of 1 thou-

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4/ LOCATION AND EXTENT OF FOREST TYPES ARE SHOWN BY FOREST SURVEY TYPE MAPS. INFORMATION REGARDING 1-INCH-TO-THE-MILE COUNTY TYPE MAPS AND ¼-INCH-TO-THE-MILE LITHOGRAPHED STATE TYPE MAPS AND HOW THEY MAY BE OBTAINED WILL BE FURNISHED UPON REQUEST. ADDRESS DIRECTOR, PACIFIC NORTHWEST FOREST EXPERIMENT STATION, 423 U. S. COURT HOUSE, PORTLAND, OREG.

sand board feet or more per acre and the reproduction is either medium or well stocked.5/ There have been no large fires in the unit in recent years and there are only two areas of deforested burn, totaling 340 acres. Western pine beetle infestations have not reached the epidemic stage here in recent years and the loss has been normal.

Logging conditions are good over most of the area occupied by the ponderosa pine stands, the exceptions being on some of the steeper slopes and in the deeper draws.

All of the timber in this portion of the forest zone should be considered as a part of a natural operating unit that includes a large body of timber in Crook County to the south, and which has, under present plans of the Forest Service in cooperation with private owners, an outlet to the west through Prineville. Although some of the timber in this unit lies over the divide in another drainage, it can probably be transported profitably to Prineville over a State highway that extends through a portion of this timber and is near to the remainder.

The second largest unit of the forest zone is in the northern portion of the county and also occupies the hogback of a spur of the Blue Mountains. This unit is roughly 25 miles in length, from 6 to 15 miles in width, and contains an area of about 235 square miles. The boundary of the forest land is irregular, long stringers of timber extending down the many deep draws that break the evenness of the slopes leading from the crest of the spur.

Ponderosa pine predominates to an even greater extent here than in the southern unit of the forest zone. Although Douglas fir, lowland white fir, and western larch are associated with the ponderosa pine throughout the unit, types in which any or all of these species make up a considerable portion of the stand are restricted to the more moist northern slopes, higher elevations, and stream courses. Mature stands of saw-timber size cover approximately four-fifths of the area; the remainder is largely of cutover land types.

Most of the ponderosa pine in the unit is of good quality, being comparable to that found throughout central Oregon, and mature stands chiefly range from 6 to 15 thousand board feet per acre. Light stands of short limby trees occur on the dryer sites along the southern boundary of the forest land and on rocky flats and ridges at the higher elevations. Of the minor species, Douglas fir is sound but of poor form, the white fir is very defective, and the

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5/ FOR DEFINITION OF STOCKING SEE EXPLANATORY TEXT, "THE FOREST SURVEY OF EASTERN OREGON AND EASTERN WASHINGTON."

larch is of fair quality. Only the larch has been utilized to any extent, a considerable volume being cut for fence posts by ranchers living in or near the forested area.

Depletion has been heavy in this part of the forest zone during the past decade, particularly from logging and pine beetle infestations.

Logging was not carried on extensively until 1928 when a large mill at Kinzua, in the northern part of the unit, began operations. Prior to that three or four small operations had logged only a limited amount of timber in different parts of the unit. Up to the time of the survey a total of about 28,000 acres had been cut over, most of it in the past 8 years.

The condition of the older cut-over areas is good and most of them are restocked with a thrifty stand of young pine of pole size; however, the more recently logged areas are in poor condition, due largely to heavy cutting and to fire after logging. On most of these latter areas the ponderosa pine reserve stand averages less than 1 thousand board feet per acre and consists largely of small suppressed trees of poor form and low vitality. On the north slopes where the original stand was of the pine mixture type, the pine has been removed leaving a stand of Douglas fir and lowland white fir with a volume of from 3 to 6 thousand board feet per acre. The reproduction on these areas is also very predominately of white fir with little or no ponderosa pine. Fire ran over an area of considerable acreage that was cut in 1928 to 1930 and practically all of the reproduction was killed. The survey classified 1,115 acres of this area as nonrestocked cutover.

During the past decade the western pine beetle has killed an average of 10 to 20 percent of the ponderosa pine volume over the greater part of the unit. Infestations reached the epidemic stage during the period 1931 to 1933 and losses were high, especially in the southern half of the unit. Losses have been about normal since 1933 when low temperatures killed a large percentage of the overwintering broods.

Very little merchantable timber has been killed by fire in recent years in this unit; three small areas, having a total area of 270 acres, were classified as deforested burns by the survey.

The timber in this portion of the forest zone in Wheeler County is part of an operating unit that includes most of the timber in Morrow, southwestern Umatilla, and northwestern Grant Counties, the natural outlet of which is north to the main line of the Union Pacific Railroad. A branch line now extends to the mill at Kinzua and it is probable that most of the timber in the operating unit will be milled at that point.

The third and smallest unit of the forest zone lies in the east-central portion of the county along the divide between the John Day River on the north and Mountain Creek on the south. This unit is a distinct forested island surrounded by nonforest land. Its nearest approach to another body of timber is to the southwest where it extends within 4 or 5 miles of the southern unit of the forest zone. The topography of the western half of the unit is fairly even and the timber occurs in a quite solid body, broken only by a few bald ridges. However, in the eastern half the topography is very broken and the boundary of the forest is irregular, the timber occurring for the most part as long stringers along the divide and reaching down the many parallel canyons that slope to the north and south. The unit is approximately 75 square miles in extent.

Ponderosa pine types, of saw-timber size and practically pure in composition, occupy all but a small percentage of the total forested area. Mixed types of ponderosa pine, Douglas fir, and lowland white fir occur to a limited extent in the western portion and there are a few small areas of immature ponderosa pine types, the result of logging. The pine found through the central portion of the western half of the unit is of average quality, and some stands run as high as 15 to 18 thousand board feet per acre; however, the timber along the fringe and in the eastern half is of poor quality.

Practically all of the depletion in this unit has been from pine beetle infestations; there has been only a small amount of logging and fire damage has been of little consequence. Pine beetle losses were greatest during the period 1931 to 1933 when on an average from 10 to 25 percent of the volume of the stands occupying the poorer sites was killed. A small sawmill near Richmond in the northwestern part of the unit has operated for several years and a total area of approximately 600 acres has been selectively logged. There is a small reserve stand of pine on most of this cutover land and a large part of the area is well stocked with pine reproduction.

This isolated body of timber forms a small separate operating unit which has at present no easy outlet. A fair road taps most of the merchantable timber but the distance and the steep grades separating the timber from markets prevent large scale exploitation under existing economic conditions. The probable outlet will be to the north, the same as the timber in the northern part of the county.

Forest Type Acreages

The area of all forest types that occur in the county is shown by ownership class in table 2, and the area of the generalized forest types is likewise shown by ownership class in table 3.

These tables bring out more fully the predominance of ponderosa pine among the species found in the county. Of the total area of 336,835 acres of forest land, exclusive of juniper types, 86 percent is occupied by the pure or mixed ponderosa pine types, and of the area of saw-timber types 90 percent is of the ponderosa pine types.

Site Quality of Forest Land

The site quality or productive capacity of the forest land is shown in table 4.

The greater portion of the land occupied by the ponderosa pine types averages site IV which is the predominant site class for pine lands in eastern Oregon and eastern Washington. The areas of lower site quality lie along the fringe of the forest zone and on the dryer south and west exposures.

Most of the area occupied by the Douglas fir and upper-slope mixture types is of the lowest Douglas fir site quality class, site V.

Ownership of Forest Land

Fifty-eight percent of the total area of forest land in Wheeler County is in private ownership, 40 percent is in Federal ownership either in the national forests or in the public domain, and the remainder is either county or State owned. The ratio of the privately owned forest land to that publicly owned is unusually high in comparison with other eastern Oregon and eastern Washington counties. Of the area of saw-timber types approximately 51 percent is privately owned, 46 percent is in Federal ownership, and the remainder is in county or State ownership.

The ownership of the forest land is shown graphically in figure 3.

Volume of Merchantable Timber

The volume of merchantable timber by species and ownership class is shown in table 1. Seventy-six percent of the total volume of 2,764,090 thousand board feet is of ponderosa pine, 12.5 percent is Douglas fir, and the remainder is largely made up of about equal amounts of western larch and lowland white fir. There is only a small volume each of Engelmann spruce and lodgepole pine.

The cordwood volume of the species that contains no saw-timber volume is shown at the bottom of table 1.

Ownership of Merchantable Timber

Private interests own 46 percent of the total volume of merchantable timber, 51 percent is federally owned, very largely on national forest lands, and the remainder is mostly on county-owned lands, there being only a small amount on the State lands. Of the total volume of merchantable ponderosa pine volume, 53 percent is privately owned, 44 percent is in Federal ownership, and the remainder is county or State owned.

Economic Development

Although Wheeler County was not created until 1899, the first development of the country now embraced in its boundaries occurred about 1860, when the John Day Valley became the route of travel for prospectors and freighters going from The Dalles on the Columbia River to the rich gold placers on Canyon Creek in Grant County. The first settlements were made on Bridge Creek in 1863 along this route and the first activity was the accommodation of travelers. Although gold was discovered in the southern part of the county, no rich deposits were ever found and mining was not carried on extensively. During the next two or three decades settlement spread and most of the fertile bottom land along the John Day River and the larger creeks was taken up. Stock raising became the principal activity and it has ever since been the chief industry. The extensive ranges supporting an abundance of bunch grasses were ideal for the grazing of sheep, cattle, and horses and many large holdings were acquired by livestock companies and individuals. It is estimated that in 1900 there were 200,000 sheep, 15,000 cattle, and 8,000 horses in the county and some of the larger companies owned from 30,000 to 50,000 acres of land. As is common throughout the West, excessive and unregulated grazing has greatly depleted the forage resource; however, the U. S. Census of Agriculture for 1930 shows there were still 145,537 sheep, 9,490 cattle, and 2,316 horses in the county. According to this census, there were 284 farms with a total area of 688,056 acres, or an average size of 2,422 acres. The total value of farm products amounted to $1,340,000, approximately 82 percent of which was derived from livestock and livestock products; hay, cash grain, and specialty crops made up practically all of the remainder. Total population numbered 2,799, about equally divided between rural farm and rural nonfarm. Fossil, the county seat and trading center for the northern part of the county, is the only incorporated town. Mitchell is the principal settlement in the southern part.

The development of State highways, market roads, and Forest Service roads has made all parts of the county accessible and provided outlets to other parts of the State.

The utilization of the forests did not play an important part in the economic development of the county until the last eight or ten years. Prior to that a few sawmills of small capacity manufactured lumber to supply the local demand; fuel wood and fence posts were cut also for local use; and the forage in the forests was grazed during the summer months by sheep and cattle. With the construction of the large sawmill at Kinzua in 1927 and the extension of a rail spur from Arlington on the main line of the Union Pacific Railroad to the mill, forest utilization began on a large scale in the northern unit of the forest zone.

In addition to the mill at Kinzua four or five small mills operated in the county in 1936 and the total 8-hour capacity of all mills was about 175 thousand board feet. Approximately 500 people are now directly employed in the lumber industries and forestry work and since 1930 forest products have accounted for about 40 percent of the wealth produced in the county.

As practically all of the arable land is now under cultivation and as the carrying capacity of the grazing lands has gradually decreased, further expansion of the agricultural industry is improbable. Continuation of the economic welfare of the county at present levels, therefore, depends to a considerable extent on wise utilization of the forest resources. If present plans of the Forest Service in cooperation with private owners materialize and the forest lands are managed on a sustained yield basis, forest utilization will be a permanent factor in the economy of Wheeler County.

FOREST STATISTICS FOR WHEELER COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 1. VOLUME OF TIMBER BY SPECIES AND OWNERSHIP CLASS
DATA CORRECTED TO NOVEMBER 1, 1936

TREES 12" AND MORE IN D.B.H.
THOUSANDS OF BOARD FEET, LOG SCALE, SCRIBNER RULE

SURVEY SYMBOL	SPECIES	PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	FEDERAL			TOTAL
					PUBLIC DOMAIN	NATIONAL FOREST		
						AVAILABLE FOR CUTTING	RESERVED FROM CUTTING	
Y	PONDEROSA PINE	1,120,335	5,609	55,903	29,972	869,676	24,142	2,105,637
LP	LODGEPOLE PINE	41		15	25	1,055		1,136
DF	DOUGLAS FIR	99,724	303	3,218	2,961	235,807	6,469	348,482
WF	LOWLAND WHITE FIR	28,800	132	602	1,032	119,130	2,465	152,161
WL	WESTERN LARCH	26,011	322	1,388	1,344	124,187	1,146	154,398
ES	ENGELMANN SPRUCE	131		15	36	2,094		2,276
	TOTAL	1,275,042	6,366	61,141	35,370	1,351,949	34,222	2,764,090

VOLUME OF CORDWOOD SPECIES
TREES 4" OR MORE IN DIAMETER 1' ABOVE GROUND
CORDS

WJ	WESTERN JUNIPER	17,835	425	930	2,185	690		22,065
MM	MOUNTAIN MAHOGANY	655	45	30	15	215		960
Asp	ASPEN	1,200	60					1,260
BC	NORTHERN BLACK COTTONWOOD	275						275
	TOTAL	19,965	530	960	2,200	905		24,560

FOREST STATISTICS FOR WHEELER COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 2. AREA, IN ACRES, OF ALL FOREST COVER TYPES, BY OWNERSHIP CLASS
DATA CORRECTED TO NOVEMBER 1, 1936

SURVEY TYPE NO.	TYPE DEFINITION	PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	FEDERAL: PUBLIC DOMAIN	FEDERAL: NATIONAL FOREST AVAILABLE FOR CUTTING	FEDERAL: NATIONAL FOREST RESERVED FROM CUTTING	TOTAL
	WOODLAND:							
5A	DENSE JUNIPER: JUNIPER OR MOUNTAIN MAHOGANY FORESTS OCCUPYING 10% OR MORE OF THE LAND AREA	1,560	115	65	25			1,765
5B	SCATTERED JUNIPER: JUNIPER OR MOUNTAIN MAHOGANY FORESTS OCCUPYING 5 TO 10% OF THE LAND AREA	44,610	680	360	3,945	1,835		51,430
5½	PONDEROSA PINE WOODLAND: SCATTERED STANDS OF MATURE PONDEROSA PINE ON UNFAVORABLE SITES	6,560	200	365	1,145	2,280		10,550
	PONDEROSA PINE: FORESTS CONTAINING 50% OR MORE OF PONDEROSA PINE							
20	PONDEROSA PINE, LARGE: FORESTS CONTAINING 50 TO 80% OF PONDEROSA PINE, MORE THAN 22" DBH	14,240	95	715	890	20,185	585	36,650
20.5	PURE PONDEROSA PINE, LARGE: FORESTS CONTAINING 80% OR MORE OF PONDEROSA PINE, MORE THAN 22" DBH	108,860	440	5,180	3,300	63,375	695	181,850
21	PONDEROSA PINE, SMALL: 12 TO 22" DBH	16,115	450	200	425	2,980		20,170
22	PONDEROSA PINE SEEDLINGS, SAPLINGS, AND POLES: LESS THAN 12" DBH	19,685	40	40	130	1,400		21,295
	PINE MIXTURE: MIXED FORESTS CONTAINING 20 TO 50% OF PONDEROSA PINE							
27	PINE MIXTURE, LARGE: 12" OR MORE DBH	1,915	95	75	320	13,245	530	16,180
28	PINE MIXTURE, SMALL: LESS THAN 12" DBH	2,990	30	35	115	40		3,210
	DOUGLAS FIR: FORESTS CONTAINING 60% OR MORE OF DOUGLAS FIR							
7	DOUGLAS FIR, SMALL OLD GROWTH: 22 TO 40" DBH	710				630		1,340
8	DOUGLAS FIR, LARGE SECOND GROWTH: 22 TO 40" DBH	100				640	190	930
9A	DOUGLAS FIR, LARGE POLES: 12 TO 20" DBH					270		270
10	DOUGLAS FIR, SEEDLINGS AND SAPLINGS: LESS THAN 6" DBH	1,585						1,585
	UPPER-SLOPE MIXTURE: MIXED FORESTS OF DOUGLAS FIR, WESTERN LARCH, LOWLAND WHITE FIR, ENGELMANN SPRUCE, OR LODGEPOLE PINE; OCCASIONALLY OTHER SPECIES							
27½	UPPER-SLOPE MIXTURE, LARGE: 12" OR MORE DBH	2,735		135	185	22,170	30	25,255
28½	UPPER-SLOPE MIXTURE, SMALL: LESS THAN 12" DBH	25		10	40	530	45	650
	LOWLAND WHITE FIR: FORESTS CONTAINING 50% OR MORE OF LOWLAND WHITE FIR							
29	LOWLAND WHITE FIR, LARGE: 12" OR MORE DBH	30			5	320		355
	LODGEPOLE PINE: FORESTS CONTAINING 50% OR MORE OF LODGEPOLE PINE							
26	LODGEPOLE PINE, MEDIUM: 6 TO 10" DBH	85				3,970		4,055
26A	LODGEPOLE PINE, SMALL: LESS THAN 6" DBH			5		540		545
	HARDWOOD: FORESTS CONTAINING 50% OR MORE OF NORTHERN BLACK COTTONWOOD AND ASPEN							
31	HARDWOODS, SMALL: LESS THAN 12" DBH	100						100
33	SUBALPINE: FORESTS AT UPPER LIMITS OF TREE GROWTH, USUALLY UNMERCHANTABLE	255			30	2,295		2,580
	NONSTOCKED CUTOVERS: LOGGED AREAS NOT SATISFACTORILY RESTOCKED AND NOT CARRYING A RESIDUAL STAND OF 1 M OR MORE PER ACRE							
35A	CUT SINCE BEGINNING OF 1920	1,040						1,040
35B	CUT BEFORE 1920	75						75
	DEFORESTED AREAS: NONRESTOCKED AREAS DEFORESTED OTHERWISE THAN BY CUTTING							
37	DEFORESTED BURNS	270				340		610
38	NONCOMMERCIAL ROCKY AREAS	3,240	45	50	675	3,500	30	7,540
	TOTALS FOR FOREST LAND	226,785	2,190	7,235	11,170	140,545	2,105	390,030
1 &2	NONFOREST LAND: CULTIVATED, GRASS, SAGEBRUSH, BARRENS, CITIES, UNMEANDERED WATER SURFACES, ETC.	683,055 ACRES OF NONFOREST LAND UNCLASSIFIED BY OWNERSHIP				17,410	65	700,530
	TOTALS FOR COUNTY					157,955	2,170	1/ 1,090,560

1/ THE TOTAL AREA OF THE COUNTY, ACCORDING TO THE BUREAU OF THE CENSUS, IS 1,090,560 ACRES. OF THIS TOTAL, 407,505 ACRES WAS CLASSIFIED AS TO OWNERSHIP BY THE FOREST SURVEY.

FOREST STATISTICS FOR WHEELER COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 3. AREA, IN ACRES, OF GENERALIZED FOREST TYPES, BY OWNERSHIP CLASS
DATA CORRECTED TO NOVEMBER 1, 1936

TYPE DEFINITION		PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	FEDERAL: PUBLIC DOMAIN	FEDERAL: NATIONAL FOREST AVAILABLE FOR CUTTING	FEDERAL: NATIONAL FOREST RESERVED FROM CUTTING	TOTAL
WOODLAND: JUNIPER								
SURVEY TYPES 5A AND 5B		46,170	795	425	3,970	1,835		53,195
HARDWOODS: COTTONWOOD AND ASPEN								
SURVEY TYPE 31		100						100
PONDEROSA PINE 12" OR MORE DBH								
SURVEY TYPES 5½, 20, 20.5, 21, AND 27		147,690	1,280	6,535	6,020	102,065	1,810	265,400
PONDEROSA PINE LESS THAN 12" DBH	ON CUTOVER AREAS	17,830		10	20	5		17,865
SURVEY TYPES 22 AND 28	ON OLD BURNS	4,845	70	65	225	1,435		6,640
	TOTAL	22,675	70	75	245	1,440		24,505
CONIFERS 12" OR MORE DBH OTHER THAN PONDEROSA								
PINE AND LODGEPOLE PINE								
SURVEY TYPES 7, 8, 9A, 27½, AND 29		3,575		135	190	24,030	220	28,150
CONIFERS LESS THAN 12" DBH OTHER THAN PONDEROSA PINE	ON CUTOVER AREAS	1,330						1,330
AND LODGEPOLE PINE	ON OLD BURNS	280		10	40	530	45	905
SURVEY TYPES 10 AND 28½	TOTAL	1,610		10	40	530	45	2,235
LODGEPOLE PINE LESS THAN 12" DBH								
SURVEY TYPES 26 AND 26A		85		5		4,510		4,600
NONCOMMERCIAL AREAS								
SURVEY TYPES 33 AND 38		3,495	45	50	705	5,795	30	10,120
NONRESTOCKED CUTOVER AREAS AND DEFORESTED BURNS								
SURVEY TYPES 35A, 35B, AND 37		1,385				340		1,725
TOTALS FOR FOREST LAND		226,785	2,190	7,235	11,170	140,545	2,105	390,030
NONFOREST LAND		683,055 ACRES OF NONFOREST LAND UNCLASSIFIED BY OWNERSHIP						
SURVEY TYPES 1 AND 2						17,410	65	700,530
TOTALS FOR COUNTY						157,955	2,170	1/ 1,090,560

1/ THE TOTAL AREA OF THE COUNTY, ACCORDING TO THE BUREAU OF THE CENSUS, IS 1,090,560 ACRES. OF THIS TOTAL, 407,505 ACRES WAS CLASSIFIED AS TO OWNERSHIP BY THE FOREST SURVEY.

FOREST STATISTICS FOR WHEELER COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 4. AREA OF FOREST LAND, BY SITE QUALITY
DATA CORRECTED TO NOVEMBER 1, 1936

TYPE	SITE QUALITY CLASS 1/	AREA			
		ACRES	PERCENTAGE OF CONIFEROUS FOREST LAND CLASSIFIED AS TO SITE QUALITY	PERCENTAGE OF TOTAL FOREST LAND 2/	PERCENTAGE OF TOTAL AREA OF COUNTY
PONDEROSA PINE, PONDEROSA PINE MIXTURE, AND WHITE FIR	PONDEROSA PINE III	16,680	5.2	4.3	1.5
	PONDEROSA PINE IV	189,250	58.8	48.5	17.4
	PONDEROSA PINE V	85,865	26.7	22.1	7.9
	PONDEROSA PINE VI	190			
	PONDEROSA PINE	291,985	90.7	74.9	26.8
DOUGLAS FIR AND UPPER-SLOPE MIXTURE	DOUGLAS FIR IV	2,160	0.7	0.6	0.2
	DOUGLAS FIR V	27,870	8.6	7.1	2.6
	DOUGLAS FIR	30,030	9.3	7.7	2.8
TOTAL		322,015	100.0	82.6	29.6
LODGEPOLE PINE		4,600		1.2	0.4
JUNIPER		3/ 53,195		13.6	4.9
NONCOMMERCIAL ROCKY AREAS		7,540		1.9	0.7
SUBALPINE		2,580		0.7	0.2
HARDWOOD		100			
TOTAL		68,015		17.4	6.2
GRAND TOTAL		390,030		100.0	35.8

1/ THE "SITE QUALITY" OF A FOREST AREA IS ITS RELATIVE PRODUCTIVE CAPACITY, DETERMINED BY CLIMATIC, SOIL, TOPOGRAPHIC, AND OTHER FACTORS. THE INDEX OF SITE QUALITY IS THE AVERAGE HEIGHT OF THE DOMINANT STAND AT THE AGE OF 100 YEARS. SIX SITE QUALITY CLASSES ARE RECOGNIZED FOR PONDEROSA PINE AND FIVE FOR DOUGLAS FIR, CLASS I BEING IN EACH CASE THE HIGHEST. IN THE SURVEY THE PONDEROSA PINE AND DOUGLAS FIR CLASSIFICATIONS, RESPECTIVELY, WERE USED NOT ONLY FOR TYPES OF WHICH THESE SPECIES ARE CHARACTERISTIC COMPONENTS BUT FOR OTHER TYPES FOR WHICH NO SITE QUALITY CLASSIFICATIONS HAVE BEEN DEVELOPED.

2/ THE COUNTY HAS A TOTAL AREA OF 1,090,560 ACRES (ACCORDING TO THE BUREAU OF CENSUS) OF WHICH 390,030 ACRES (35.8 PERCENT) IS FOREST LAND AND 700,530 ACRES (64.2 PERCENT) IS NONFOREST LAND.

3/ INCLUDES 585 ACRES OF MOUNTAIN MAHOGANY AND 1,035 ACRES OF JUNIPER AND MAHOGANY MIXTURE.

FOREST STATISTICS FOR WHEELER COUNTY, OREGON

FROM INVENTORY PHASE OF FOREST SURVEY

FIGURE 2. DISTRIBUTION OF SAW-TIMBER VOLUME BY SPECIES AND OWNERSHIP CLASS (FROM TABLE 1)

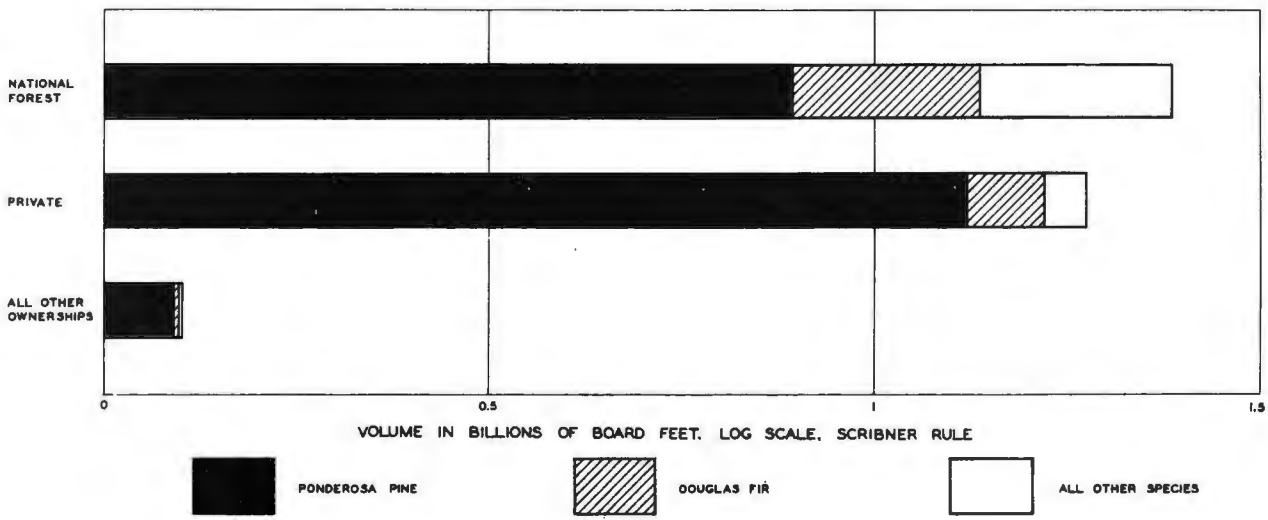

FIGURE 3. OWNERSHIP OF FOREST LAND (FROM TABLE 2)

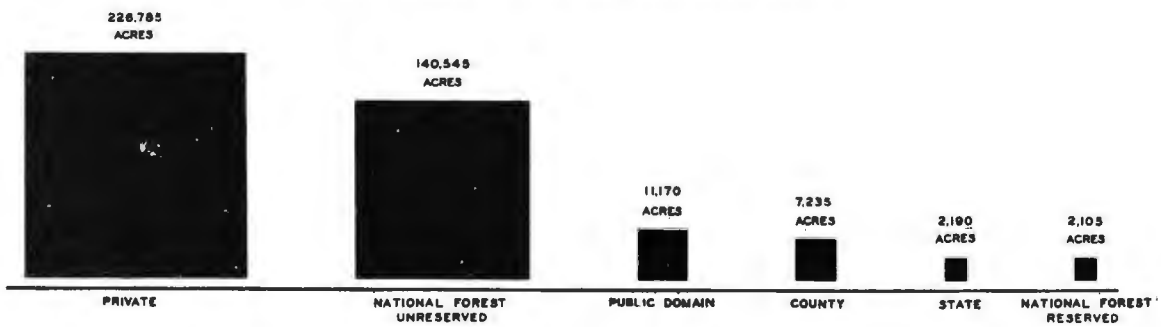

FIGURE 4. DISTRIBUTION OF FOREST LAND BY GENERALIZED TYPES ALL OWNERSHIP CLASSES (FROM TABLE 3)